

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5					Airborne Mine Countermeasures / 0604373N					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total PE Cost		31.673	52.351	47.312	57.529	52.452	11.722	0.000	0.000	367.814
Airborne Mine Hunt Systems/ Q0529		19.295	15.513	16.969	9.912	0.000	0.000	0.000	0.000	174.572
ALMDS / Q2047		4.674	19.794	18.144	14.928	21.331	0.000	0.000	0.000	78.877
SWIMS/ Q2427		3.834	4.803	4.178	14.181	14.784	2.097	0.000	0.000	45.763
AMNS / Q2473		1.935	12.241	8.021	18.508	16.337	9.625	0.000	0.000	66.667
SWIMS Acoustic Projector Q2642		1.935	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.935
Quantity of RDT&E Articles										
A. Mission Description and Budget Item Justification: This program develops airborne mine countermeasures systems that are required to counter known and projected mine threats. It provides a capability to locate pressure-combination and sweep resistant mines at greater coverage rates and by more rapidly deployable means. It also provides a non-acoustic mine detection and classification capability against floating and tethered mines using Light Detection and Ranging (LIDAR) techniques. Cable improvements will provide higher reliability, longer life and higher current capacity. This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.										
B. Program Change Summary										
				FY 1999	FY 2000		FY 2001			
FY 2000 President's Budget:				30.877	50.642		51.279			
Appropriated Value:				28.967	52.642					
Adjustment to FY 1999 Appropriated Value/										
FY 2000 President's Budget:				2.706	-0.291		-3.967			
FY 2001 President's Budget Submit:				31.673	52.351		47.312			
Funding: FY99 reflects acceleration of C4I Upgrade Development (+\$3.700), SBIR reduction (-\$.599), Congressional undistributed reductions (-\$.367), April BTR update (+\$.134) , midyear review BTR (-\$.096), and BSO 1002 Actual Update (-\$.066). FY00 reflects Across by board reduction (-\$.291). FY01 reflects NWCF rate adjustment (+\$.082), Restructure for OASIS (-\$3.673 thousand), Mil/Civ Pay rate (+\$.014), Nonpay Pur Inflation (-\$.324), Active Navy Ops (-\$.125), and NSWC Adjustments (+\$.059).										

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Exhibit R-2, RDT&E Budget Item Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
							February 2000			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N				Airborne Mine Hunt Systems/Q0529					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		19.295	15.513	16.969	9.912	0.000	0.000	0.000	0.000	174.572
RDT&E Articles Qty										

A Mission Description and Budget Item Justification

This project includes a sonar for mine detection, classification and identification; a system for mine neutralization by explosive charge, equipment to provide shallow water mine sweeping (FY99 only). There is currently no rapid airborne mine neutralization capability to support minehunting. Additionally, the Navy does not possess a capability to conduct high speed minefield reconnaissance to determine mine density and location. The AN/AQS-20/X is being developed to address the emergent requirement for mine identification and to integrate AMCM systems with a CH-60S platform. The AN/AQS-20/X will also be the minehunting sonar component for the Remote Minehunting System (RMS). The AN/AQS-20/X will be developed to meet the capabilities with the new Organic MCM platforms. The Laser Line Scan System (LLSS) provides interim Identification capability to the AQS-14A minehunting system.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**1. (U) FY 1999 ACCOMPLISHMENTS**

- (U) (\$1.500) AN/AQS-20/X – Initiated AN/AQS-20/X ID sensor design
- (U) (\$5.860) AN/AQS-20 – Completed tow test and contractor demonstration. Conducted DT-IIA and Operational Assessment.
- (U) (\$.200) HERRIGAN – Configuration Theory Tactical Decision Aid.
- (U) (\$3.260) Laser Line Scan System (LLSS) – Initiated integration of the LLSS into the AN/AQS-14A.
- (U) (\$4.411) AMNS - Initiated integration into the MH-53 helicopter.
- (U) (\$4.064) AMNS - Performed system integration, data analysis, TECHEVAL preparations.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5			PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Mine Hunt Systems/Q0529																																																					
<p>2. (U) FY 2000 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.506) LLSS – Continue integration into the AN/AQS-14A and demonstrate the LLSS. - (U) (\$5.269) AN/AQS-20/X – Begin H-60 conversion of AQS-20/X. - (U) (\$7.738) AN/AQS-20/X – Continue ID sensor design and engineering. - (U) AMNS – Transferred to project Q2473 P.E. 0604373N <p>3. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$10.896) AN/AQS-20/X – Complete fabrication/integration of EDMs. - (U) (\$4.024) AN/AQS-20/X – Complete Critical Design Review. - (U) (\$1.134) LLSS – Complete modification of the AQS-14. - (U) (\$0.915) LLSS – Development of support equipment. <p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 8%;">FY 1999</th> <th style="width: 8%;">FY 2000</th> <th style="width: 8%;">FY 2001</th> <th style="width: 8%;">FY 2002</th> <th style="width: 8%;">FY 2003</th> <th style="width: 8%;">FY 2004</th> <th style="width: 8%;">FY 2005</th> <th style="width: 8%;">To Complete</th> <th style="width: 8%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>AQS-20</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">18.021</td> <td style="text-align: right;">19.800</td> <td style="text-align: right;">26.325</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">64.146</td> </tr> <tr> <td>AN/AQS-14A LLSS</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">4.263</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">4.263</td> </tr> <tr> <td>AQS-20/X</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">31.440</td> <td style="text-align: right;">25.310</td> <td style="text-align: right;">20.500</td> <td style="text-align: right;">CONT.</td> <td style="text-align: right;">CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: Continue AN/AQS-20 to OP-Assessment, procuring eight (8) LRIP systems starting in FY 00. This gives the fleet an MH-53E interim capability with two (2) systems to be provided to RMS program (63502N/Q0260) as GFE. Evolve the AQS-20 to the AN/AQS-20/X with ID capability and integrate it to the CH-60S and RMS platforms. FY 99 funds the interim capability of design, integration, and testing of an ID capability on the AN/AQS-14A Laser Line Scan System (LLSS). Limited production of four (4) systems in FY 01.</p> <p>D. Schedule Profile: See attached.</p>											FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost	OPN 424800										AQS-20	0.000	18.021	19.800	26.325	0.000	0.000	0.000	0.000	64.146	AN/AQS-14A LLSS	0.000	0.000	4.263	0.000	0.000	0.000	0.000	0.000	4.263	AQS-20/X	0.000	0.000	0.000	0.000	31.440	25.310	20.500	CONT.	CONT.
	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost																																																		
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AQS-20/X	0.000	0.000	0.000	0.000	31.440	25.310	20.500	CONT.	CONT.																																																		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2000

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

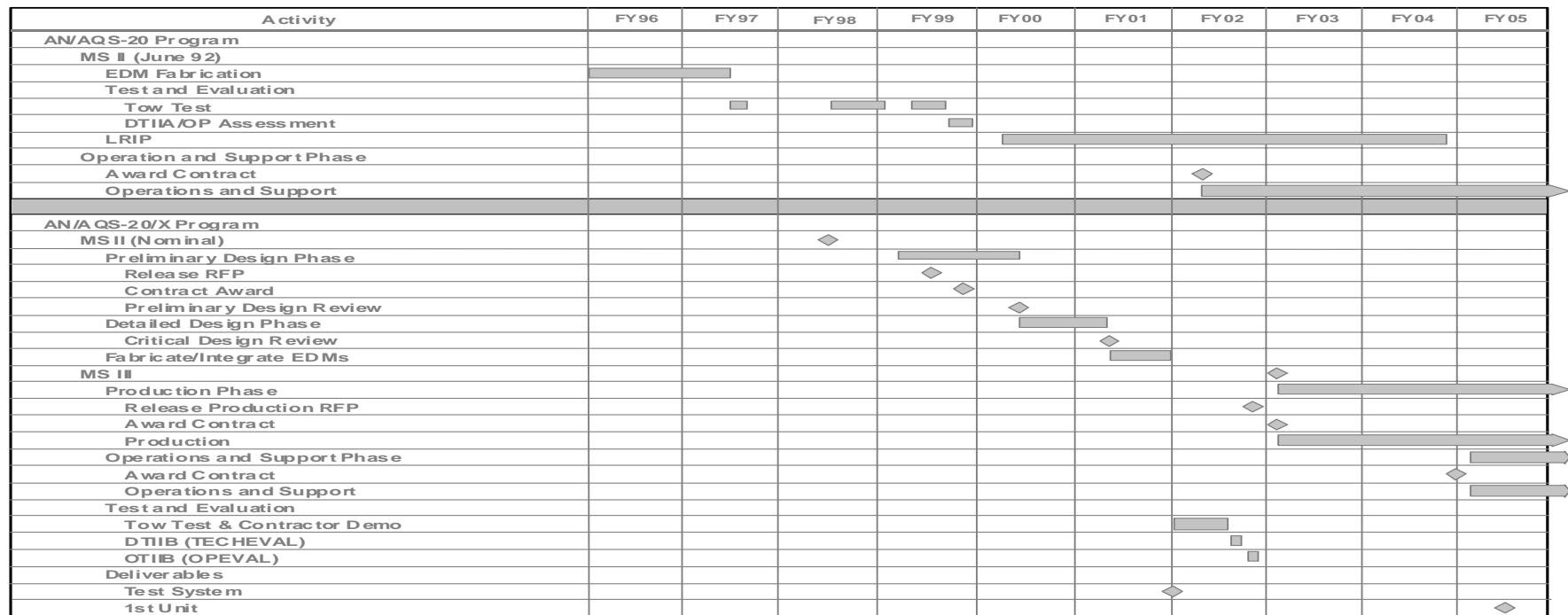
PROJECT NAME AND NUMBER

RDT&E, N , BA-5

Airborne Mine Countermeasures/0604373N

Airborne Mine Hunt Systems/Q0529

AN/AQS-20/X Schedule



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Exhibit R-2a, RDT&E Project Justification
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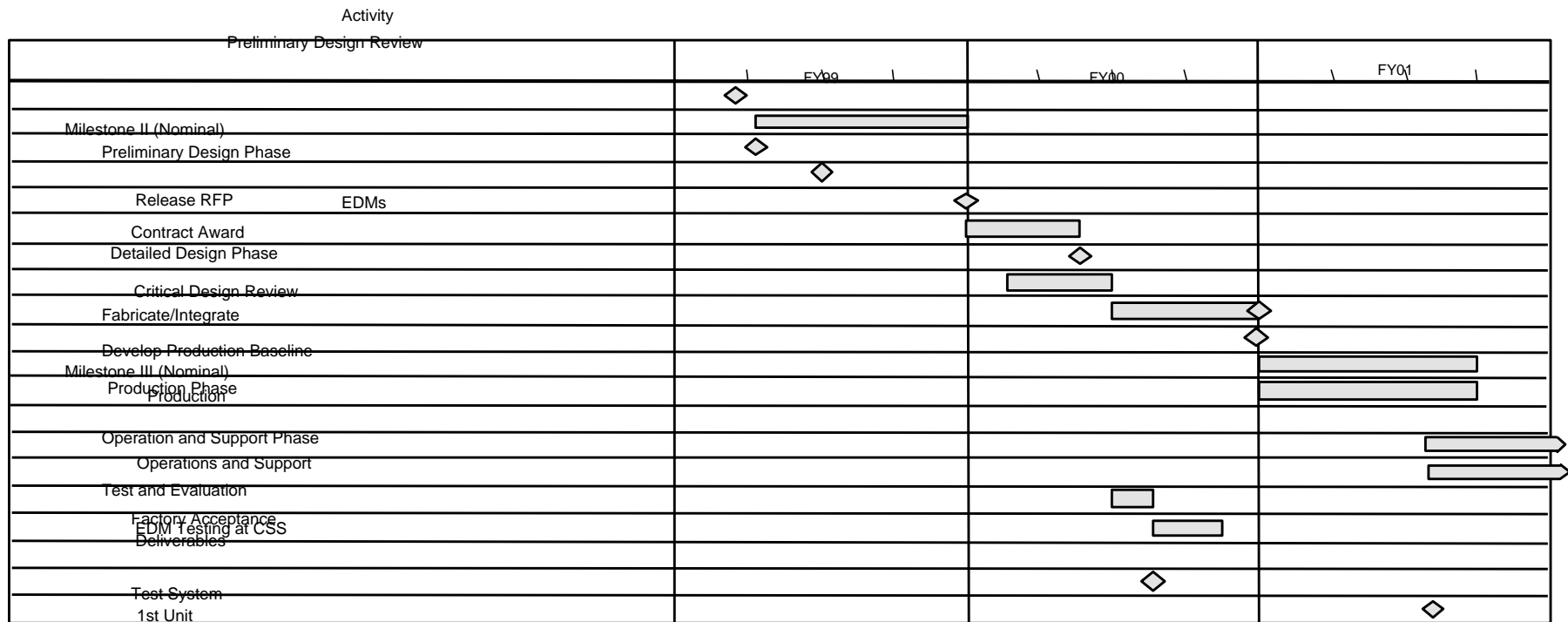
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EXHIBIT R-2a, RDT&E Project Justification		DATE:	February 2000
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER	
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N	Airborne Mine Hunt Systems/Q0529	

AN/AQS-14A with Laser Line Scan



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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
AQS-20	C/CPFF	Raytheon, RI	54.631	2.100	10/99						56.731	
AQS-20/X	C/CPIF	Raytheon, RI		1.500	08/99	7.286	10/99	13.406	01/01	5.002	27.194	
AQS-14A LLS	C/FFP	Northrup Grumman, MD		2.624	04/99	1.400	02/00	1.034	10/00	0.000	5.058	
AMNS	C/FP	Lockheed, NY		4.411	12/98						4.411	
Award Fees											0.000	
Systems Engineering		VARIOUS	33.915	4.339	10/98	4.344	10/99	0.407	10/00		43.005	
Subtotal Product Development			88.546	14.974		13.030		14.847		5.002	136.399	
Remarks:												
Development Support Equipment	WR	VARIOUS				0.506	10/99	0.592	10/00	0.000	1.098	
Software Development											0.000	
Training Development		VARIOUS	2.000								2.000	
Integrated Logistics Support		VARIOUS	3.852	0.760	10/98						4.612	
Configuration Management		VARIOUS	2.000								2.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			7.852	0.760		0.506		0.592		0.000	9.710	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)						DATE: February 2000						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	CSS, Panama City		2.083	10/98					1.505	3.588	
Operational Test & Evaluation	WR	CSS, Panama City		0.700	06/99					3.511	4.211	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	2.783		0.000		0.000		5.016	7.799	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support		VARIOUS	8.237	0.557	11/98	1.784	11/99	1.335	10/00		11.913	
Program Management Support			8.142	0.150	11/98	0.173	11/99	0.175	11/00		8.640	
Travel				0.071		0.020		0.020			0.111	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			16.379	0.778		1.977		1.530		0.000	20.664	
Remarks:												
Total Cost			112.777	19.295		15.513		16.969		10.018	174.572	
Remarks: AN/AQS-20 Project Only (FY99=\$5.860); AQS-14A LLSS Project Only (FY99=\$3.460, FY00=\$2.506, FY01=\$2.049); AMNS Project Only (FY99=\$8.475); AN/AQS-20/X Project Only (FY99=\$1.500, FY00=\$13.007, FY01=\$14.920)												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Laser Mine Detection Systems/Q2047					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		4.674	19.794	18.144	14.928	21.331	0.000	0.000	0.000	78.877
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification Airborne Laser Mine Detection Systems (ALMDS) is a light detection and ranging (LIDAR) system for rapid detection and localization of floating and near surface tethered mines. A competitive evaluation of ALMDS candidate technologies represented by the Magic Lantern, ATD-III, and Hyperspectral systems was conducted and will reduce the risk associated with ALMDS development.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 1999 ACCOMPLISHMENTS</p> <ul style="list-style-type: none"> - (U) (\$.984) Prepared RFP, evaluated response to award contract. - (U) (\$.904) Evaluated integration studies. - (U) (\$1.826) Initiated engineering design for H-60 studies. - (U) (\$.960) Prepared MS II documentation and obtained MS II. <p>2. (U) FY 2000 PLANS</p> <ul style="list-style-type: none"> - (U) (\$12.943) Award contract for EMD and perform systems engineering. - (U) (\$5.381) Continue the development of support equipment, software, training, ILS, configuration and technical data. - (U) (\$1.470) Performance modeling/assessment, combat system coordination. 										

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Laser Mine Detection Systems/Q2047																																		
<p>3. (U) FY 2001 Plan</p> <ul style="list-style-type: none"> - (U) (\$12.503) Design and develop the EMD. - (U) (\$5.641) Conduct Preliminary and Critical Design Reviews. 																																							
<p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 8%;">FY 1999</th> <th style="width: 8%;">FY 2000</th> <th style="width: 8%;">FY 2001</th> <th style="width: 8%;">FY 2002</th> <th style="width: 8%;">FY 2003</th> <th style="width: 8%;">FY 2004</th> <th style="width: 8%;">FY 2005</th> <th style="width: 8%;">To Complete</th> <th style="width: 8%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>ALMDS</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">29.400</td> <td style="text-align: center;">44.483</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table>											FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost	OPN 424800										ALMDS	0	0	0	0	0	29.400	44.483	CONT.	CONT.
	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost																														
OPN 424800																																							
ALMDS	0	0	0	0	0	29.400	44.483	CONT.	CONT.																														
<p>C. Acquisition Strategy: Full and open competition is planned for the ALMDS EMD program. The ALMDS contract will be awarded by competition. The draft RFP was sent to industry for comment in April 1999 and the final RFP was issued on 1 July 1999. Milestone II is scheduled for February 2000 and contract award is scheduled for March 2000.</p>																																							
<p>D. Schedule Profile: See attached.</p>																																							

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RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N	Airborne Laser Mine Detection Systems/Q2047		

ALMDS Schedule

Activity	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Issuance of Solicitation				◆						
Milestone I Contract					◆					
Design										
H-60 Assigned to ALMDS										
Integration										
Physical Configuration Audit										
Milestone III										
Production Contract										
Test and Evaluation										
Contractor Tests										
DT-IIA/IIB (TECHEVAL)										
Initial OP Look - DTA										
OPEVAL										

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RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Laser Mine Detection Systems/Q2047						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	TBD				7.225	03/00	6.800	12/00	7.150	21.175	
Hardware Development	WR	CSS, Panama City		0.924	10/98	0.900	10/99	0.900	11/00	0.200	2.924	
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.924		8.125		7.700		7.350	24.099	
Remarks:												
Development Support Equipment	VAR	Various				0.800	12/99	2.100	12/00	2.169	5.069	
Software Development	VAR	Various		0.500	11/98	3.890	12/99	2.400	12/00	1.800	8.590	
Training Development	VAR	Various				0.129	12/99	0.400	12/00	2.000	2.529	
Integrated Logistics Support	VAR	Various				3.500	12/99	1.572	12/00	1.800	6.872	
Configuration Management	VAR	Various				0.100	12/99	0.200	12/00	0.900	1.200	
Technical Data	VAR	Various		1.000	10/98			0.100	12/00	1.800	2.900	
GFE										2.100	2.100	
Subtotal Support			0.000	1.500		8.419		6.772		12.569	29.260	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Laser Mine Detection Systems/Q2047						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF	TBD								2.900	2.900	
Developmental Test & Evaluation	WR	CSS, Panama City								2.100	2.100	
Operational Test & Evaluation	C/CPFF	TBD								0.400	0.400	
Operational Test & Evaluation	WR	CSS, Panama City								2.900	2.900	
Subtotal T&E			0.000	0.000		0.000		0.000		8.300	8.300	
Remarks:												
Contractor Engineering Support	C/CPFF	TBD				1.800	02/00	1.950	11/00	3.800	7.550	
Government Engineering Support	WR	CSS, Panama City		1.200		1.200	10/99	1.272	10/00	3.327	6.999	
Program Management Support	C/CPFF	TBD				0.100	02/00	0.200	11/00	0.419	0.719	
Program Management Support	WR	CSS, Panama City		1.000	11/98	0.100	10/99	0.200	10/00	0.400	1.700	
Travel		Various		0.050	11/98	0.050	10/99	0.050	10/00	0.100	0.250	
Labor (Research Personnel)											0.000	
Subtotal Management			0.000	2.250		3.250		3.672		8.046	17.218	
Remarks:												
Total Cost			0.000	4.674		19.794		18.144		36.265	78.877	
Remarks:												

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COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		3.834	4.803	4.178	14.181	14.784	2.097	0.000	0.000	45.763
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification
 The Organic Airborne & Surface Influence Sweep (OASIS), formerly SWIMS, will provide a self-contained, high tow speed, shallow water influence multi-sweep capability, capable of being towed by the organic CH60S helicopter and selected surface craft.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 1999 ACCOMPLISHMENTS

- (U) (\$3.834) Awarded contract for Analysis of Alternatives for Organic Airborne and Surface Influence Sweep (OASIS). Began preparation of RFP.

2. (U) FY 2000 PLAN:

- (U) (\$1.508) Complete AOA and Initiate System Engineering.
- (U) (\$1.500) Complete MSII amd award EDM Contract.
- (U) (\$1.495) Program management and acquisition support.
- (U) (\$0.300) Complete Test and Evaluation.

3. (U) FY 2001 PLAN:

- (U) (\$4.178) Complete engineering/design efforts. Begin fabrication of the OASIS.

B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
OPN 424800									
OASIS	0.000	0.000	0.000	0.000	0.000	12.400	12.541	CONT.	CONT.

C. Acquisition Strategy: Following an Analysis of Alternatives in FY00, a CPIF contract will be awarded using full and open competition.

D. Schedule Profile: See attached.

R-1 SHOPPING LIST - Item No. 100 - 13 of 100 - 26

Exhibit R-2a, RDT&E Project Justification
 (Exhibit R-2a, page 13 of 26)

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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER				
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Shallow Water Influence Minesweep System/Q2427				
OASIS										
Activity	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Analysis of Alternatives										
AoA Report										
RFP & Proposal Evaluation										
Milestone II										
Contract Award										
Preliminary Design Phase										
Engineering/Design										
Fabrication										
Integration										
Contractor Demo										
Milestone III										
Production Phase										
Award Production Contract										
Production										
O&S Phase										
Test & Evaluation										
DT IIC TECHEVAL										
DT IIC OPEVAL										
Deliverables										
EDMs										
1st Unit										

R-1 SHOPPING LIST - Item No. 100 - 14 of 100 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 14 of 26)

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Shallow Water Influence Minesweep System/Q2427						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	EDO Corp / TBD	1.722			1.500	09/00	0.985	12/00	9.600	13.807	
Ancillary Hardware Development	C/CPFF	TBD				0.000	09/00	0.420	12/00		0.420	
Systems Engineering	WR	VARIOUS				1.058	10/99	0.389	12/00	3.530	4.977	
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.722	0.000		2.558		1.794		13.130	19.204	
Remarks:												
Development Support Equipment												
Software Development		TBD						0.200	12/00	1.200	1.400	
Training Development		TBD								1.575	1.575	
Integrated Logistics Support	WR	VARIOUS				0.450	10/99	0.350	12/00	1.675	2.475	
Configuration Management	WR	VARIOUS						0.100	12/00	0.800	0.900	
Technical Data	WR	VARIOUS						0.150	10/00		0.150	
GFE												
Subtotal Support			0.000	0.000		0.450		0.800		5.250	6.500	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Shallow Water Influence Minesweep System/Q2427						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	VARIOUS				0.300	01/00			3.205	3.505	
Operational Test & Evaluation	VAR	VARIOUS								4.351	4.351	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.300		0.000		7.556	7.856	
Remarks:												
Contractor Engineering Support	VAR	CSS Panama City	0.000	0.740	12/98						0.740	
Government Engineering Support	WR	CSS Panama City	0.040	1.244	12/98	0.715	12/99	0.714	12/00	1.914	4.627	
Program Management Support	VAR	VARIOUS	0.122	0.944	12/98	0.500	12/99	0.830	12/00	3.142	5.538	
Travel	VAR	VARIOUS	0.002	0.030	12/98	0.080	12/99	0.040	12/00	0.070	0.222	
Labor (Research Personnel)	VAR	VARIOUS		0.876	12/98	0.200	12/99				1.076	
Overhead											0.000	
Subtotal Management			0.164	3.834		1.495		1.584		5.126	12.203	
Remarks:												
Total Cost			1.886	3.834		4.803		4.178		31.062	45.763	
Remarks:												

R-1 SHOPPING LIST - Item No. 100 - 16 of 100 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 16 of 26)

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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
							February 2000			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N				Airborne Mine Neutralization Systems/Q2473					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		1.935	12.241	8.021	18.508	16.337	9.625	0.000	0.000	66.667
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification

There is currently no rapid airborne mine neutralization capability to support minehunting. The Airborne Mine Neutralization System (AMNS) research and development effort was restarted in FY97 in Project Q0529 P.E. 0604373N. AMNS will provide the CH-60S with the capability to neutralize bottom and moored mines using an airborne delivered, expendable mine neutralization device. The AMNS will first be tested on the MH-53E to prove out the neutralization effectiveness, then it will transition to the CH-60S for organic neutralization. The Rapid Airborne Mine Clearance System (RAMICS) program began in FY00 and will provide an effective rapid organic airborne laser detection, targeting, and super cavitating projectile destruction of shallow water mines off the CH-60S platform. The RAMICS will use a laser for fire control to direct placement of super cavitating rounds that cause the mine's explosive charge to ignite and burn.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS**1. (U) FY 1999 Accomplishments**

- (U) (\$1.935) AMNS - Evaluated the effectiveness of semi-autonomous untethered operational mine neutralization for CH-60S. Congressional Add.

2. (U) FY 2000 Plan

- (U) (\$1.603) AMNS - Deliver prototype neutralizers, prototype AMNS and integrate aboard MH-53.
- (U) (\$3.706) AMNS - Conduct TECHEVAL and OPEVAL testing for MH-53 interim capability.
- (U) (\$4.932) RAMICS – Initiate CH-60S gun integration and Analysis of Alternatives Study.
- (U) (\$2.000) AMNS - CH-60 Upgrade. Develop prototype carriage and delivery system for deployment of the AMNS. (Cong Add)

3. (U) FY 2001 Plan

- (U) (\$3.226) AMNS - Initiate integration aboard CH-60S and fabricate additional systems to test and evaluate.
- (U) (\$4.795) RAMICS – Continue CH-60S gun integration, obtain MS II, award EMD contract and initiate design phase.

R-1 SHOPPING LIST - Item No. 100 - 17 of 100 - 26

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 17 of 26)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N				PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473				
B. Other Program Funding Summary									
	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
OPN 424800									
AMNS	0	4.121	3.931	11.357	7.640	7.654	4.441	CONT.	CONT.
RAMICS	0	0	0	0	0	0	19.983	CONT.	CONT.
<p>C. Acquisition Strategy: Full and open competition contract was awarded for AMNS CH-60S EMD program. Full and open competition is planned for the RAMICS CH-60S EMD program. The Advanced Technology Development (ATD) will demonstrate the feasibility of mine neutralization from Super-Cobra platform and serve as technology baselining and risk reduction for the EMD program.</p> <p>D. Schedule Profile: See attached</p>									

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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER				
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473				
RAMICS										
Activity	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Milestone II						◆				
Risk Reduction										
Gun/Munition Certifications										
EMD Phase										
Release RFP						◆				
EMD Contract										
Design										
Fabricate										
Milestone III										◆
Production Phase										
Award Production Phase Contract										◆
Production										→
Test & Evaluation										
ATD3										
In-house										
Demo										
DT II A										
OT II B										
Deliverables										
Test System										
First Unit										
IOC										

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 19 of 26)

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2000

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N , BA-5

Airborne Mine Countermeasures/0604373N

Airborne Mine Hunt Systems/Q2473

AMNS Schedule

Activity	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Milestone II (1982)										
Requirements Definition										
Design Phase										
Release RFP										
845 Agreement Award										
Design/Fabricate										
Integrate to MH-53E										
LRIP (MH-53E)										
CH-60 Design Phase										
Design/Fabricate										
Integrate to CH-60S										
Milestone III										
Production (CH-60S)										
Operations and Support Phase										
Award O&S Contract										
Operations and Support										
Test and Evaluation										
DTIIA MH-53E TECHEVAL										
OTIIA MH-53E OPEVAL										
CH-60S FOT&E										
Deliverables										
Test Systems										
1st LRIP Unit (MH-53E)										
1st FRP Unit (CH-60S)										

R-1 SHOPPING LIST - Item No. 100 - 20 of 100 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 20 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
AMNS	C/FP	LOCKHEED		1.200	08/99	1.076	12/99	2.480	12/00	3.365	8.121	
RAMICS	C/FP	TBD				5.192	02/00	3.570	12/00	27.753	36.515	
Systems Engineering	WR	VARIOUS		0.735	08/99	2.004	10/99	1.891	10/00	5.818	10.448	
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	1.935		8.272		7.941		36.936	55.084	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support	WR	VARIOUS				0.175	10/99				0.175	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.175		0.000		0.000	0.175	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	CSS, Panama City				1.506	10/99			3.000	4.506	
Operational Test & Evaluation	WR	OPTEVFOR				2.200	02/00			4.325	6.525	
Tooling												
GFE												
Subtotal T&E			0.000	0.000		3.706		0.000		7.325	11.031	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel						0.088	09/00	0.080		0.209	0.377	
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		0.088		0.080		0.209	0.377	
Remarks: AMNS Project Only (FY=99 \$1.935, FY00=\$5.309, FY01=\$3.226, FY02= \$4 .013, FY 03 =\$1.900); RAMICS Project Only (FY00=\$6.932, FY01=\$4.795, FY02=\$14.495, FY03=\$14.437, FY04=\$9.625)												
Total Cost			0.000	1.935		12.241		8.021		44.470	66.667	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5		Airborne Mine Countermeasures/0604373N			Airborne MCM Program Increase/Q2642						
COST (\$ in Millions)			FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost			1.935	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.935
RDT&E Articles Qty											

A. Mission Description and Budget Item Justification
Congressional add to demonstrate the effectiveness of the combined magnetic and acoustic influences.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 1999 Plan

- (U) (\$1.935) Established test plans and procedures. Conducted tests and determined the combined effectiveness.

2. (U) FY 2000 Plan

- Not applicable.

3. (U) FY 2001 Plan

- Not applicable.

B. Other Program Funding Summary

	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
Not applicable.										

C. Acquisition Strategy: Not Applicable

D. Schedule Profile: See attached.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2000

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N , BA-5**Airborne Mine Countermeasures/0604373N****Airborne MCM Program Increase/Q2642**

Acoustic SWIMS Demo

Activity	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
PHASE 1 - TEST REQUIREMENTS										
Test Plan and Procedures										
Requirements Review										
PHASE 2 - DESIGN										
Packaging & Wiring Harness Design										
Design Status Review										
PHASE 3 - ASSEMBLY & TEST										
Assembly & Test										
Program Summary Review										

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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)						DATE: February 2000						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne MCM Program Increase/Q2642						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/FP	EDO Corp		1.935							1.935	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	1.935		0.000		0.000		0.000	1.935	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne MCM Program Increase/Q2642						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation	WR	CSS, Panama City										
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	1.935		0.000		0.000		0.000	1.935	
Remarks:												

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